

Detailed Action

Response to Amendment

1. Applicant's Remarks/Arguments filed on 3/19/2009 regarding claims 1-25 have been fully considered. Claims 14-25 have been newly added by applicant. Claims 1-25 are currently pending.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with applicant's representative, Mr. Howard Bernstein, on 5/7/2009.

The application has been amended for claims 9, 13, 23-25 as follows:

9. (currently amended): A route updating suppression method for a network comprising of at least a router device wherein the router device comprises: a plurality of network interfaces for connection to an outside, and routing processing means for performing routing processing for a packet received through at least one of said plurality of network interface on the basis of route information stored in advance, the method comprising:

the step of recognizing at the router device any one of an up state in which there is a continuous connection for not less than a first predetermined time, a down state in which there is a continuous disconnection for not less than a second predetermined time, and a hit state in which a connection and a disconnection repeatedly occur while remaining in the hit state, on the side of a plurality of virtual interfaces arranged between said network interfaces and the routing processing means so as to respectively correspond to the plurality of network interfaces; and the step of managing a change in state of a link for connection to the outside in accordance with a recognition result.

13. (currently amended): A computer ~~readable media~~ recording medium having a computer program encoded therein for a route updating suppression method for a network including at least a router device including a plurality of network interfaces for connection to an outside, and routing processing means for performing routing processing for a packet received through at least one of said network interfaces on the basis of route information stored in advance, said program comprising:

the step of recognizing any one of an up state in which there is a continuous connection for not less than a first predetermined time, a down state in which there is a continuous

disconnection for not less than a second predetermined time, and a hit state in which a connection and a disconnection repeatedly occur while remaining in the hit state, on the side of a plurality of virtual interfaces arranged between the said network interfaces and the routing processing means so as to respectively correspond to the plurality of network interfaces; and

the step of managing a change in state of a link for connection to the outside in accordance with a recognition result.

23. (currently amended): The computer ~~readable media~~ recording medium of claim 13, wherein the program further comprises a step of maintaining the state of a link in the hit state until a connection or disconnection occurs for at least a first predetermined time or a second predetermined time respectively.

24. (currently amended): The computer ~~readable media~~ recording medium of claim 13, wherein the program further comprises a step of notifying another routing device that it is in the hit state.

25. (currently amended): The computer ~~readable media~~ recording medium of claim 13 wherein the program further comprises a step of notifying a change in the state of a link of at

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least one of said network interfaces to said routing processing means if either the up state or the down state occur.

EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

3. The following is an examiner's statement of reasons for allowance:

The present application relates to providing a network including at a router device, wherein the router device comprises the unique functions of:

“a plurality of virtual interfaces which manage a change in a link state of at least one of said network interfaces, wherein said link state is one of an up state in which there is continuous connection for not less than a first predetermined time, a down state in which there is a continuous disconnection for not less than a second predetermined time, and a hit state in which a connection and a disconnection repeatedly occur while remaining in the hit state.”

The closest prior art, Jones (US Publication 2002/1069794), discloses a router in a communication network wherein OSPF protocol is being employed to route IP traffic based on the link state information and the link state can be changed between active and inactive state. However, Jones fails to anticipate or render obvious the above quoted limitations of the present application. This renders the claims allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. M./
Examiner, Art Unit 2416

/Chi H Pham/
Supervisory Patent Examiner, Art Unit
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5/14/09